From:	James McKenna
To:	Bill Locke; Rene Fuentes/R10/USEPA/US@EPA; Eric Blischke/R10/USEPA/US@EPA
Cc:	Chip Humphrey/R10/USEPA/US@EPA; Gene Revelas; Keith Pine; Jarrod Gasper; Jennifer Woronets; Bob Wyatt
Subject:	RE: Piper Diagram Comments
Date:	11/04/2010 09:36 AM

Thanks Bill, and thanks Rene and Eric for working with us on these issues. As Bill says, please let us know if these resolutions work for the Agency. If so, we'll take this back to the LWG Exec committee with a recommendation for approval.

Again thanks, Jim.

-----Original Message-----
From: Bill Locke [mailto:wlocke@integral-corp.com]
Sent: Thursday, November 04, 2010 9:33 AM
To: Fuentes.Rene@epamail.epa.gov; Blischke.Eric@epamail.epa.gov
Cc: Humphrey.Chip@epamail.epa.gov; Gene Revelas; James McKenna; Keith Pine; Jarrod Gasper
Subject: RE: Piper Diagram Comments

Rene and Eric,

Thanks very much for the helpful clarifications you provided regarding EPA's comments on the Piper Diagrams presented in Appendix C2. In response, we propose to make the following specific changes to the presentation of this information in the revised RI report:

1. We will provide a thorough written description of the methods used in the construction of the Piper Diagrams, along with an expanded discussion of the underlying datasets (general discussion to be provided at Section C3.0.4; site-specific discussion to be provided in Sections 3.n.4.1 (n=1-9) for each TZW study site).

2. We will label the upland wells and TZW stations on the Piper Diagrams and provide a cross reference to a well location map for each site (we feel this will be more useful than an upland well transect, as it will allow us to use all available upland groundwater major ion data for each site, not just those wells that fall along a transect line).

3. We will verify that all of the symbol sizes in the diamond-shaped area of the plots are appropriately sized proportionally to TDS.

4. We will use a common, linear TDS scale (0-2,200 mg/L) for all of the site-specific Piper Diagrams except for Rhone Poulenc and Arkema, for which a logarithmic scale will be used due to the larger variability in TDS at those two sites.

5. We will provide a sitewide Piper Diagram showing all of the groundwater and TZW data for the nine study sites (diamond area only). For the sake of readability, we will consider aggregating the surface water data (e.g., averaging) on this plot, rather than showing all of the individual data points. Symbol sizes will be proportional to log-TDS.

Please let me know if these actions are acceptable and will address your concerns.

Thanks again,

Bill

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-----Original Message-----
From: Blischke.Eric@epamail.epa.gov [mailto:Blischke.Eric@epamail.epa.gov]
Sent: Thursday, October 28, 2010 1:55 PM
To: Bill Locke
Cc: Fuentes.Rene@epamail.epa.gov; Humphrey.Chip@epamail.epa.gov
Subject: Piper Diagram Comments

Bill, below find additional clarification on the piper diagram comments. Because we did not have time to discuss these comments yesterday, please contact Rene to discuss his concerns further and resolve the comments. Rene can be reached at 1-206-553-1599.

Thanks, Eric

There is no written explanation of how the piper diagrams were constructed, so it is impossible to understand or recreate these diagrams. They should start with the discharge maps that were provided in Appendix C2 and then provide an upland well transect that follows the discharge map (e.g., Rhone Poulenc transect G-G'). Each well should be labeled on the piper diagram in the triangles and the diamond so that you can link the wells. The concentrations in each well should be sized appropriately to the magnitude in the diamond plot. It is inappropriate to group all the upland data into one point, especially since the data is all over the place. Based on how the data is presenting for the surface water, those could be presented in one spot because they are tightly located.

It is OK to have piper plots for each site to show groundwater pathway if done as above, however, they should have a site-wide plot, too. This would only be the diamond plot, not the triangles. They can use log-scale for this if the concentrations are vastly different (this has been done on other sites).